

Nucleonica: Tips & Tricks

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nucleonica ... web driven nuclear science

Home username Login AutoLogin

Home

Welcome
Free Access
Premium Membership
Our Customers
Nucleonica [blog]
Nucleonica [wiki]
Forum
Karlsruhe Nuclide Chart
..... Online Shop
Educational Resources
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FAQ
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NUCLEONICA HOT TOPICS

» **New! Virtual Cloud Chamber**
November 10, 2011
We announce the release of a new Nucleonica module: the Virtual Cloud Chamber. This powerful application is an online interactive simulation tool for investigating the

What is Nucleonica?

- » Nucleonica is an innovative professional and technical resource for knowledge creation and competence building for the worldwide nuclear science community. The portal has grown to become the leading online resource in the nuclear sciences and is particularly suitable for education and training of young scientists, engineers and technicians in the nuclear domain. Our applications enable researchers and specialists to make complex and precise calculations in state-of-the-art fashion.
- » Nucleonica is aimed at scientists, engineers and technical personnel working in the fields of nuclear power, health physics, radiation protection, nuclear and radiochemistry, decommissioning, nuclear medicine, etc. It can be used by professionals for everyday calculations, obtaining quick results and testing, validating and verifying complex computer models.
- » Nucleonica provides you with user-friendly access to the latest reference data from internationally evaluated nuclear data. A unique feature is the wide range of web-based nuclear science applications. A variety of social networking tools are provided for scientific collaboration. In addition, Nucleonica offers a range of

NUCLEAR NEWS

New telescope to guard Earth from killer asteroids
JUN 30 Some 500,000 asteroids are circulating near-Earth space and some of them may pose a real danger to our planet. But a US company says it plans to build a telescope that will be able to watch them. Read [...]

U.N. publishes report on Iran arms trade with Syria
JUN 30 UNITED NATIONS (Reuters) - A U.N. Security Council committee has published a report on Iranian sanctions violations, including shipments of weapons to Syria in breach of a U.N. ban on weapons exports [...]

More firms in danger of systems meltdown, claims risk expert
JUN 30 MORE than half of Irish companies are now at risk of an Ulster Bank-style systems meltdown because they are operating increasingly complicated IT systems -- but have failed to commit to the additional [...]

Japan discovers large rare earth deposits
JUN 30 Large and rich rare earth deposits, equaling at least 220 times the country's annual consumption, have been discovered near Minami-Torishima island in the Ogasawara Islands, a research

Nucleonica: Tips & Tricks

1. Using browser tabs
2. Using the wiki context sensitive Help
3. Accessing the Nucleonica blog
4. Increase font size in your browser
5. Using the datagrid / slider control to rearrange data
6. Increase the default size of graphs in your web browser
7. How to change your login username and password
8. Full screen mode (F11)



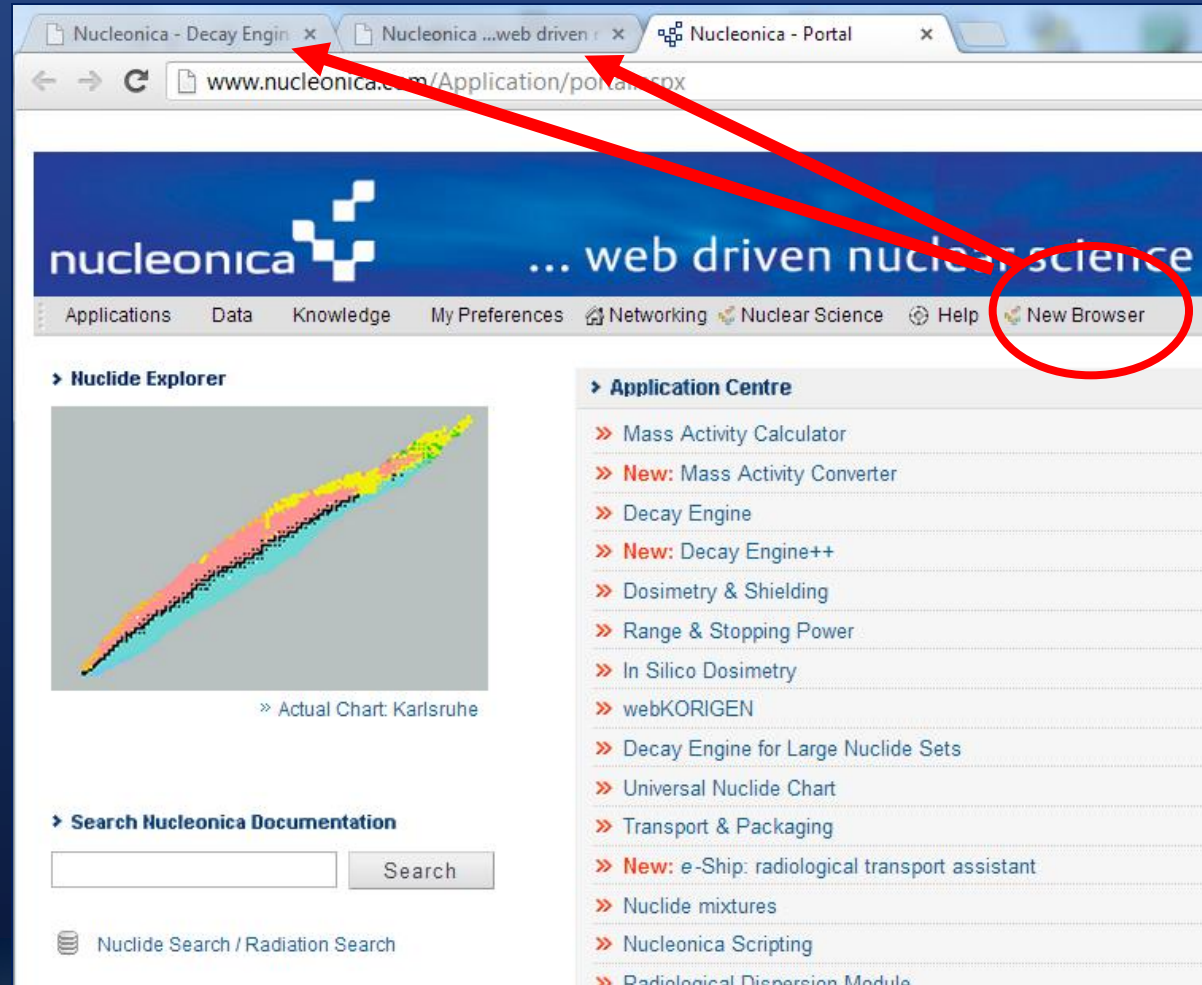
The screenshot displays the Nucleonica website. The header features the Nucleonica logo and the tagline "... web driven nuclear science". Navigation links include Home, Sitemap, About us, Privacy Statement, and Legal Notice. A login section with fields for username and password, and an AutoLogin button, is present. The left sidebar contains a "Welcome" section with links to Free Access, Premium Membership, Our Customers, Nucleonica [blog], Nucleonica [wiki], Forum, Karlsruhe Nuclide Chart, Online Shop, Educational Resources, Training Courses, Ask an Expert, FAQ, About Us, Contact, and Impressum. The main content area includes a large image of a hand pointing at a periodic table, a "What is Nucleonica?" section, and a "NUCLEONICA HOT TOPICS" section. The right sidebar features "NUCLEAR NEWS" with several articles, including "New telescope to guard Earth from killer asteroids", "U.N. publishes report on Iran arms trade with Syria", "More firms in danger of systems meltdown, claims risk expert", and "Japan discovers large rare earth deposits".

Nucleonica: Tips & Tricks

1. Open a new browser tab:

This allows you to have different applications / data pages in different tabs of the web browser.

Example: This example shows Nucleonica's nuclear science page in one of the tabs. By clicking on the New Browser link, new browser pages can be opened in different tabs. Here both the Decay Engine and Datasheets are shown in two additional tabs. The user can then move from one application to the other by selecting the appropriate tab.



Move a tab to a new browser window: hold the mouse pressed on the tab and drag it to the desktop. This is very useful for comparing two pages side by side at the same time

e-Ship+
radiological transport assistant

This is a beta version of the new web application e-Ship+. Please report errors to info@nucleonica.com.

Edit Options Decay Import Activity limits CERN file Sample packages About e-Ship

Selected transport packages

Package Name	Mass (g)	Items	Content	Form
(Create, import a new package)				
Cs-137	1	1	Articles	Special
Cs-137kkkk	10		Material	Other
CS137-TEST	1		Material	Other
Decayed: Natural Uranium 2	1		Material	Other

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2.2.7.2.2 *Determination of activity level*

2.2.7.2.2.1 The following basic values for individual radionuclides are given in Table 2.2.7.2.2.1:

- (a) A_1 and A_2 in TBq;
- (b) Activity concentration for exempt material in Bq/g; and
- (c) Activity limits for exempt consignments in Bq.

Table 2.2.7.2.2.1: Basic radionuclides values for individual radionuclides

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Actinium (89)				
Ac-225 (a)	8×10^{-1}	6×10^{-3}	1×10^1	1×10^4
Ac-227 (a)	9×10^{-1}	9×10^{-5}	1×10^{-1}	1×10^3
Ac-228	6×10^{-1}	5×10^{-1}	1×10^1	1×10^6
Silver (47)				
Ag-105	2×10^0	2×10^0	1×10^2	1×10^6
Ag-108m (a)	7×10^{-1}	7×10^{-1}	1×10^1 (b)	1×10^6 (b)

Nucleonica: Tips & Tricks

2. Use the wiki context sensitive Help

When using a particular application, the user can obtain information on, for example, how to use the application or find out the underlying theory, etc. by clicking on the Help button in the taskbar.

In the example shown, the Decay Engine application is being used. To find out how to use this application or information on the underlying theory, the user need only click on the Help button in the taskbar.

The wiki Help page for this application then opens in a new browser tab

The screenshot displays the Nucleonica website interface. At the top, the header reads "nucleonica ... web driven nuclear science". Below this, a navigation bar includes links for Applications, Data, Knowledge, My Preferences, Print, Networking, Nuclear Science, and Help (circled in red with a red arrow pointing to the Help:Decay Engine++ page). The main content area shows the "Decay Engine++" application for "63 Europium". It features a bar chart for Eu152 with three bars representing 1.6 h, 9.26 h, and 12.53 y. Below the chart, there are input fields for Element (Eu), Mass (152 m), and a Mixture selector. The application is currently set to "Karlsruhe". The main interface has tabs for "Decay Engine", "Options", "Decay Tree", and "Mixture details". The "Decay Engine" tab is active, showing input fields for "Starting quantity" (1e6), "Final total quantity" (9.85E+02), "Unit" (becquerel), "Decay Time" (3.86E+00), and "Time Unit" (day). There are "Start" and "Reset" buttons, and a checkbox for "Show rescale tool". On the right side, a "Help:Decay Engine++" page is open, showing a "Level: Intermediate" and a "Contents" list. The "Contents" list includes sections like "1 Using the Decay Engine++", "2 Results Grid", "3 Graphical Output", "4 Options", "5 Decay Tree", and "6 Mixture details". The "Help" button in the navigation bar is circled in red, and a red arrow points from it to the "Help:Decay Engine++" page.

nucleonica ... web driven nuclear science

Applications Data Knowledge My Preferences Print Networking Nuclear Science **Help** New Browser

Eu152

1.6 h 9.26 h 12.53 y

Decay Engine++

63 Europium

Current Chart: Karlsruhe

Element Mass Mixture selector

Eu 152 m

Decay Engine Options Decay Tree Mixture details

Starting quantity Final total quantity Unit

1e6 9.85E+02 becquerel

Decay Time Time Unit

3.86E+00 day

Start Reset

☐ Show rescale tool

Help:Decay Engine++

Level: Intermediate

This page is under preparation. In the meantime

Contents [hide]

- 1 Using the Decay Engine++
 - 1.1 Input User Interface
 - 1.2 Starting / Final quantities
 - 1.3 Decay time and Time Unit
 - 1.4 Calculation details
 - 1.4.1 Time axis
 - 1.4.2 Initial timestep
 - 1.4.3 CPU time / total time(s)
 - 1.4.4 Start / Reset
- 2 Results Grid
 - 2.1 Rescale Feature
 - 2.2 Download
- 3 Graphical Output
 - 3.1 Show graph settings
- 4 Options
 - 4.1 Mode of operation
 - 4.2 Calculation details
 - 4.3 Results grid output selector
- 5 Decay Tree
- 6 Mixture details

Using the Decay Engine++

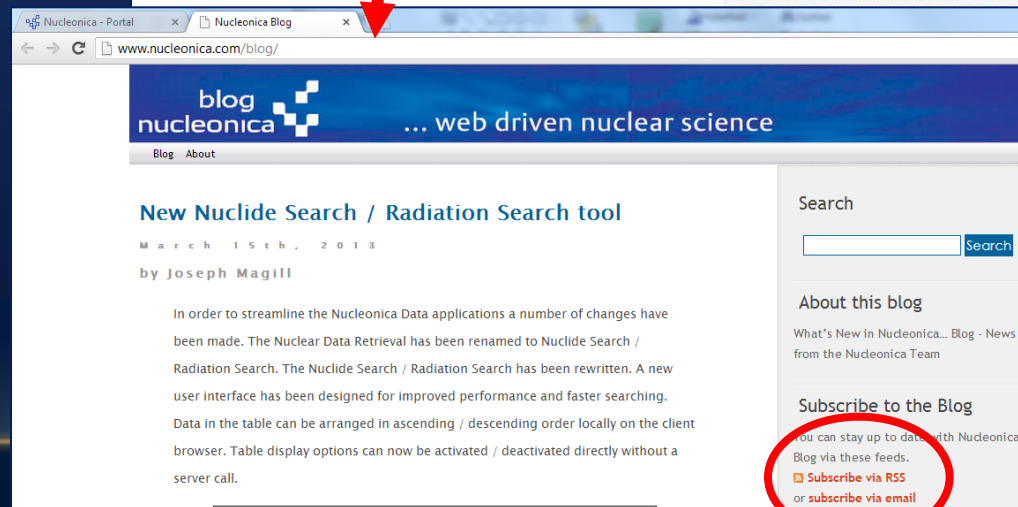
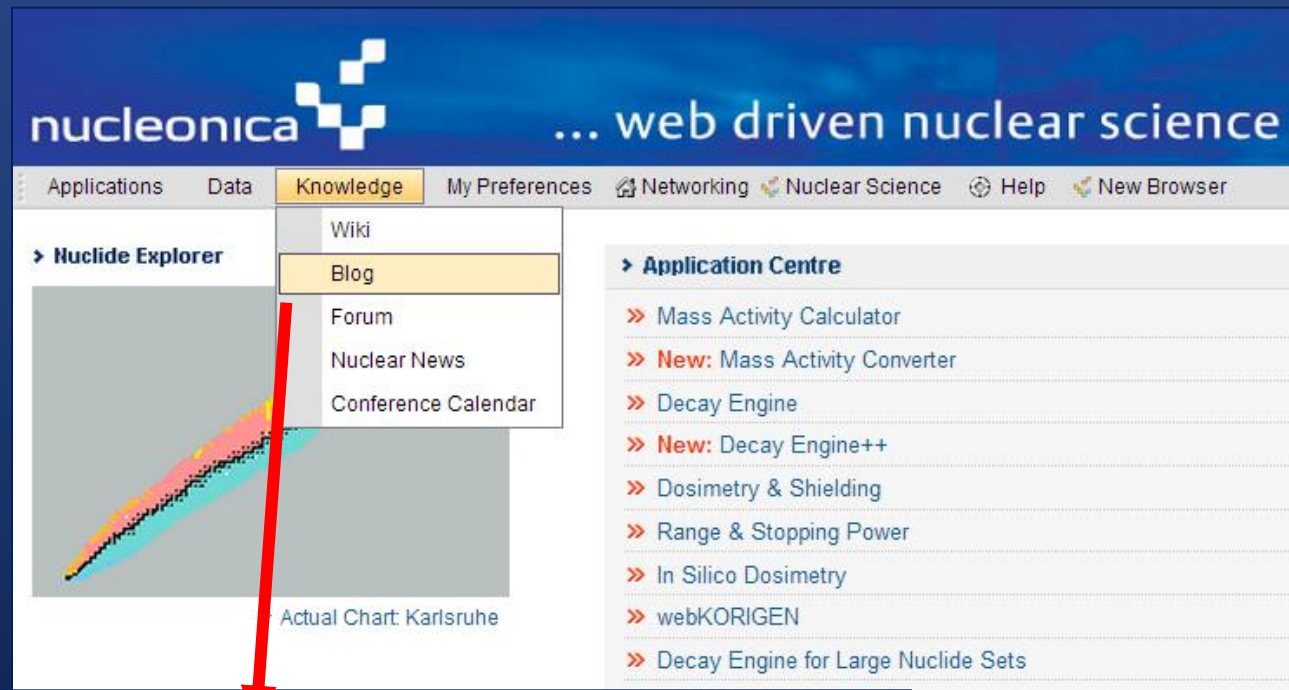
To make a decay calculation within Nucleonica, nuclide chart, and then with the right mouse but

nucleonica

Nucleonica: Tips & Tricks

3. Access the Nucleonica blog

Users can keep informed of the latest developments on Nucleonica through the blog. This can be accessed from the Knowledge button in the taskbar. The blog is then opened in a new tab. Users can subscribe to the blog via email. As soon as new information is posted, the user will receive an alert by email.



Nucleonica: Tips & Tricks

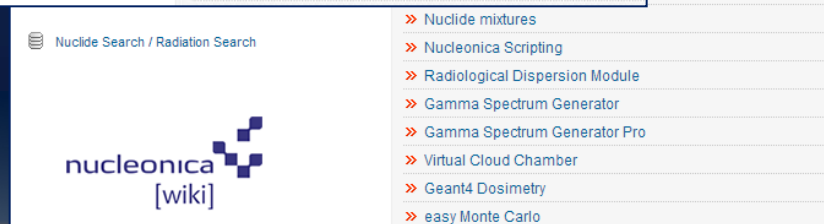
4. Increase font size in your browser

The font size in the browser window can be increased / decreased by pressing the key combination

Strg
or
Cntrl

+

+/-



5. Using the datagrid / slider control to re-arrange data

Type	E (keV)	Emission probability ▼
γ	1332.490	9.998260e-1
β ⁻	318.136	9.9880e-1
γ	1173.230	9.9850e-1
β ⁻	1491.320	1.20e-3
e ⁻	0.840	3.92e-4
e ⁻	6.540	1.560e-4
e ⁻	1164.900	1.508e-4
e ⁻	1324.160	1.150e-4
γ	826.100	7.60e-5
γ	347.140	7.50e-5
X	7.47815	6.44e-5
X	7.46089	3.27e-5
β ⁻	665.256	2.0000e-5
e ⁻	1172.220	1.478e-5
X	8.260	1.31e-5
γ	2158.570	1.20e-5
e ⁻	1331.480	1.130e-5
X	0.850	1.49e-6
e ⁻	338.807	3.77e-7
e ⁻	346.132	3.81e-8
e ⁻	817.767	2.36e-8
γ	2505.690	2.00e-8
e ⁻	825.092	2.23e-9
e ⁻	2150.240	5.38e-10
e ⁻	2157.560	5.16e-11
4	27	Page: 1 / 2

We use the Datasheet++ Radiations to demonstrate this.

By default, the data is arranged by emission probability in descending order (highest value first).

To sort by energy E(keV), the user checks the header in the table to arrange in ascending / descending order. A small triangle is shown which is either pointing up (for ascending order) or down (for descending order).

The user can then use the slider control to scroll through multiple pages of data.

Type	E (keV) ▲	Emission probability
e ⁻	0.840	3.92e-4
X	0.850	1.49e-6
e ⁻	6.540	1.560e-4
X	7.46089	3.27e-5
X	7.47815	6.44e-5
X	8.260	1.31e-5
β ⁻	318.136	9.9880e-1
e ⁻	338.807	3.77e-7
e ⁻	346.132	3.81e-8
γ	347.140	7.50e-5
β ⁻	665.256	2.0000e-5
e ⁻	817.767	2.36e-8
e ⁻	825.092	2.23e-9
γ	826.100	7.60e-5
e ⁻	1164.900	1.508e-4
e ⁻	1172.220	1.478e-5
γ	1173.230	9.9850e-1
e ⁻	1324.160	1.150e-4
e ⁻	1331.480	1.130e-5
γ	1332.490	9.998260e-1
β ⁻	1491.320	1.20e-3
e ⁻	2150.240	5.38e-10
e ⁻	2157.560	5.16e-11
γ	2158.570	1.20e-5
e ⁻	2497.360	1.56e-12
4	27	Page: 1 / 2

6. Increase the default size of graphs in your web browser

The screenshot shows the Nucleonica website interface. The 'My Preferences' menu is highlighted with a red circle, and a red arrow points from it to the 'My Settings' section in the second screenshot.

nucleonica ... web driven nuclear science

Applications Data Knowledge **My Preferences** Print Networking Nuclear Science Help New Browser

My Profile
My Settings
My Community
My Groups
My Messages
My Alerts
My Chart: Karlsruhe
My Last Nuclides
My Last Mixtures
My Last Sources

Nucleonica Networking

- » Networking
- » My Profile
- » My Community
- » My Mailbox
- » My Groups
- » My Settings

Tools

- » Forum
- » webGraph

Applications Portal

- » nuclear science

Nucleonica Blog

Nuclide Datasheets++: Radiations

The Radiations tab in the Nuclide Datasheets has been completely redesigned (alpha, beta, gamma, etc.) from a particular radio-nuclide can now be seen coded based on the type of radiation. Through the use of [...]

New Nuclide Search / Radiation Search tool

In order to streamline the Nucleonica Data applications a number of changes have been made to the Nuclide Search / Radiation Search. The Nuclide Search / Radiation Search tool has been completely redesigned to be more user-friendly and to provide a more comprehensive search experience.

The screenshot shows the 'My Settings' form in the Nucleonica website. The 'Graph Settings' section is highlighted with a red circle, and a red arrow points from the 'My Settings' menu in the first screenshot to it.

nucleonica ... web driven nuclear science

Applications Data Knowledge My Preferences Print Networking Nuclear Science Help New Browser

My Preferences

My Settings

My registration details

First name: TR5
Family name: TR5
Date of Birth: 12 February 1956
Organization:
Address:
Postcode:
Country:
Phone:
Fax:
E-Mail: tr5@utrecht

Login

Username: tr5
New password:
Repeat new password:

☐ Use nuclear science portal as default page

Alerts

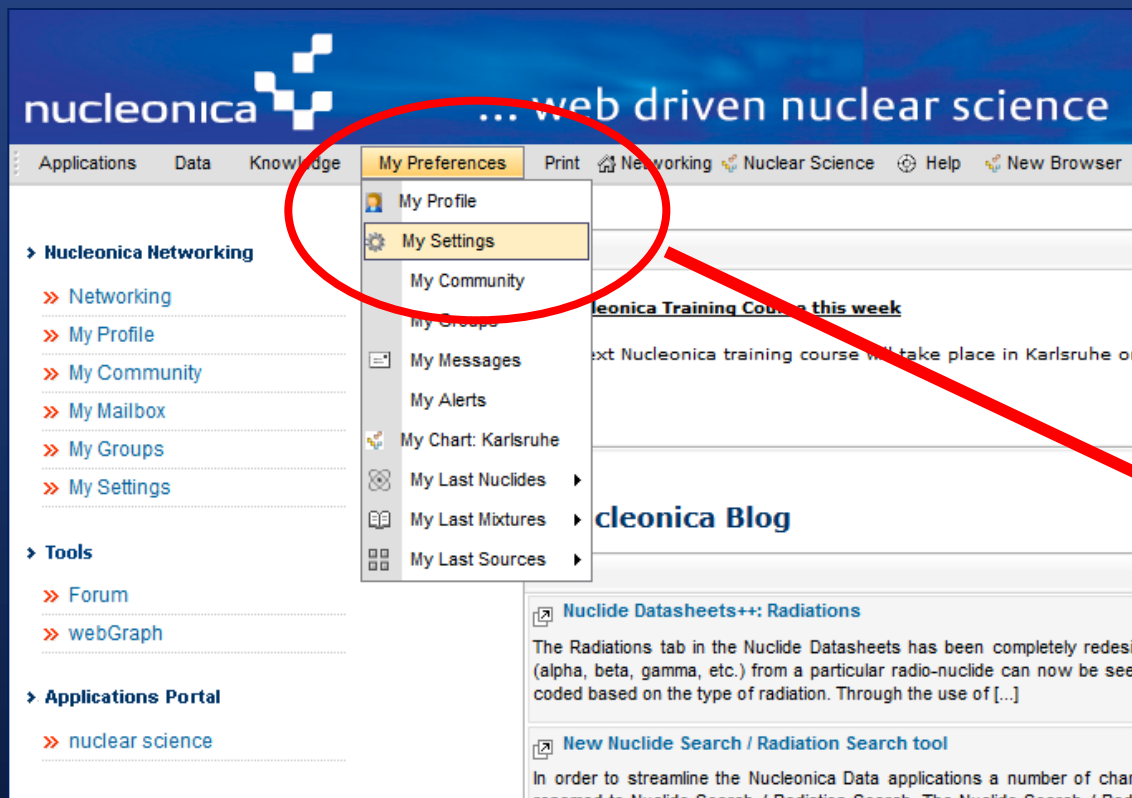
☐ Alert if someone replies to one of my forum entries
☐ Send email alerts

Graph Settings

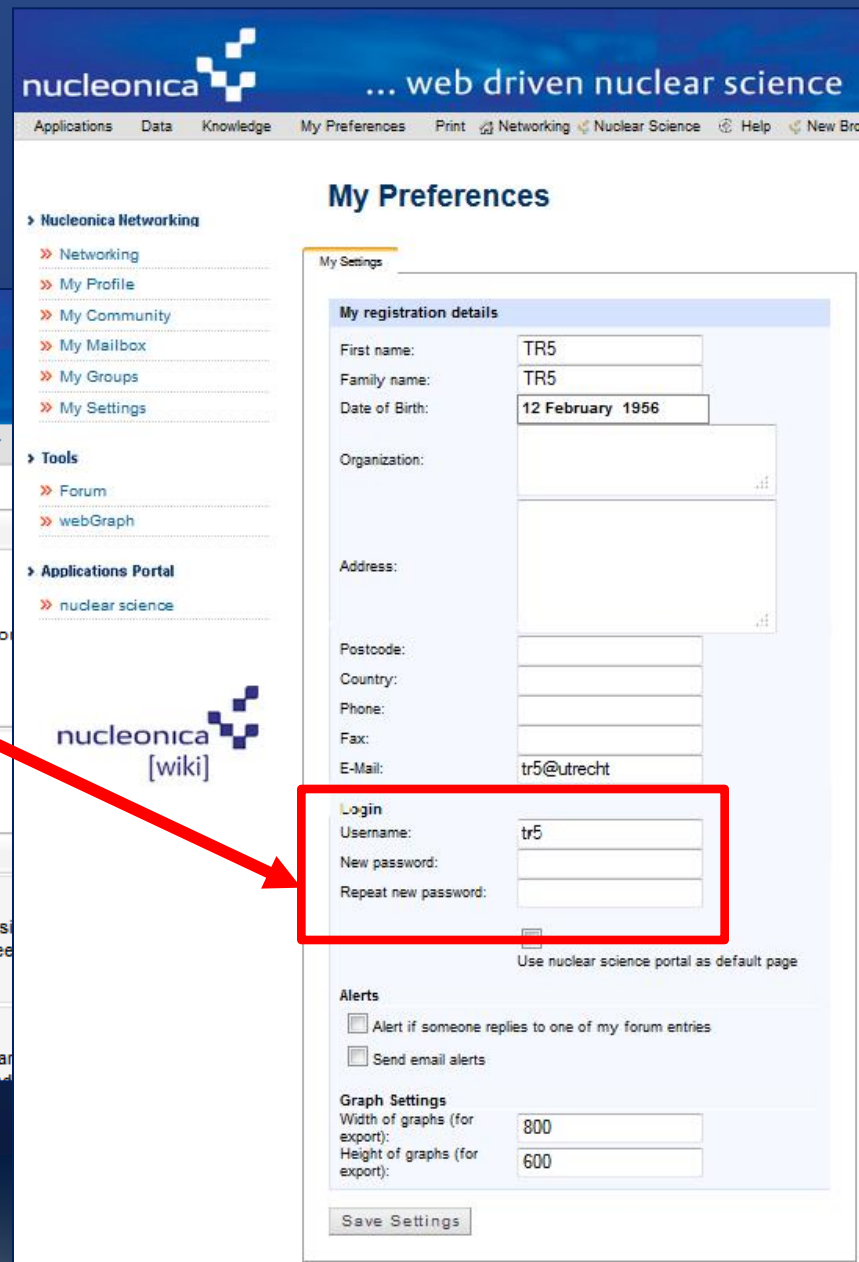
Width of graphs (for export): 800
Height of graphs (for export): 600

Save Settings

7. Change your login username and password



The screenshot shows the Nucleonica website interface. The top navigation bar includes 'Applications', 'Data', 'Knowledge', 'My Preferences', 'Print', 'Networking', 'Nuclear Science', 'Help', and 'New Browser'. The 'My Preferences' menu is open, showing options: 'My Profile', 'My Settings', 'My Community', 'My Groups', 'My Messages', 'My Alerts', 'My Chart: Karlsruhe', 'My Last Nuclides', 'My Last Mixtures', and 'My Last Sources'. A red circle highlights the 'My Settings' option, and a red arrow points from it to the 'My Settings' page shown in the adjacent screenshot.



The screenshot shows the 'My Preferences' page on the Nucleonica website. The 'My Settings' section is highlighted. It contains the following fields:

- My registration details:**
 - First name: TR5
 - Family name: TR5
 - Date of Birth: 12 February 1956
 - Organization: (empty)
 - Address: (empty)
 - Postcode: (empty)
 - Country: (empty)
 - Phone: (empty)
 - Fax: (empty)
 - E-Mail: tr5@utrecht
- Login:**
 - Username: tr5
 - New password: (empty)
 - Repeat new password: (empty)
- Alerts:**
 - ☐ Alert if someone replies to one of my forum entries
 - ☐ Send email alerts
- Graph Settings:**
 - Width of graphs (for export): 800
 - Height of graphs (for export): 600

A 'Save Settings' button is located at the bottom of the page. A red box highlights the 'Login' section, and a red arrow points from the 'My Settings' menu item in the previous screenshot to this section.

8. Full screen mode: F11

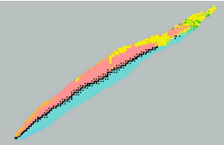
Sie befinden sich im Vollbildmodus. [Vollbildmodus beenden \(F11\)](#)

Logged in as: [magill \(Administrator\)](#) [Search](#) [Forum](#) [Calculator](#) [Privacy](#) [Legal](#)

nucleonica ... web driven nuclear science

Applications Data Knowledge My Preferences Networking Nuclear Science Help New Browser Tab Logout

Nuclide Explorer



Actual Chart: Karlsruhe

Search Nucleonica Documentation

Application Centre

- New:** Mass Activity Converter
- Mass Activity Calculator
- New:** Decay Engine++
- Decay Engine
- Dosimetry & Shielding
- Range & Stopping Power
- In Silico Dosimetry
- webKORIGEN
- Decay Engine for Large Nuclide Sets
- Universal Nuclide Chart
- New:** e-Ship: radiological transport assistant
- Transport & Packaging
- Nuclide mixtures

My Sources

- test cobalt
- testco
- Pu241 with daughters
- Pu241- 15mg - 8y old - solid, non-special form
- Uranium metal
- Uranium.xml
- Pu239 1 g

My Messages

No messages for you at the moment


User Alerts

No alerts at the moment

Data Centre

- Physical Constants
- Nuclide Explorer
- New:** Nuclide Chart (SVG)
- New:** Nuclide Datasheets++ (Reference Data, Radiations, Derived Data, Cross Sections) (Prompt Gammas)
- Nuclide Datasheets

Nuclide Search / Radiation Search

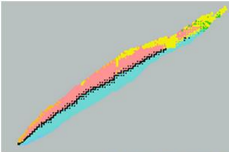


Logged in as: [magill \(Administrator\)](#) [Search](#) [Forum](#) [Calculator](#) [Privacy](#) [Legal](#)

nucleonica ... web driven nuclear science

Applications Data Knowledge My Preferences Networking Nuclear Science Help New Browser Tab Logout

Nuclide Explorer



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- Uranium metal
- Uranium.xml
- Pu239 1 g

My Messages

No messages for you at the moment

User Alerts

No alerts at the moment

My Last Nuclides

- 27 Co60
- 55 Cs137
- 43 Tc99 m
- 81 Tl204
- 9 F18

My Nuclide Mixtures

- SRM 071 U isotopes separated 1. July 1977
- smnew
- SRM 071
- Natural Uranium
- Natural Potassium

My Settings

Administration Networking

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8. Full screen mode (F11)

The screenshot displays the Nucleonica website with a dark blue header. The header includes the Nucleonica logo, the tagline "... web driven nuclear science", and navigation links: Home | Sitemap | About us | Privacy Statement | Legal Notice. A date stamp "Saturday, June 30, 2012" is visible on the right. Below the header is a login section with fields for "username" and "password", an "AutoLogin" button, and a "Login" link. A left sidebar menu lists various site features: Welcome, Free Access, Premium Membership, Our Customers, Nucleonica [blog], Nucleonica [wiki], Forum, Karlsruhe Nuclide Chart, Online Shop, Educational Resources, Training Courses, Ask an Expert, FAQ, About Us, Contact, and Impressum. The main content area features a large image of a hand pointing at a periodic table of elements. Below this image is a section titled "What is Nucleonica?" containing three paragraphs describing the portal's purpose and features. To the right of the main content is a "NUCLEAR NEWS" section with three articles, each dated "JUN 30". The first article is about a new telescope to guard Earth from killer asteroids. The second is about a U.N. report on Iran's arms trade with Syria. The third is about more firms in danger of systems meltdown. At the bottom left, a "NUCLEONICA HOT TOPICS" section highlights a "New! Virtual Cloud Chamber" article dated November 10, 2011.

Activate browser tabs:



Firefox-Browser:

On the browser Top left, click Firefox --> Options --> Tabs --> Check (or uncheck) "Open new window in a new tab"



IE9:

On the top right click the wheel --> Internet options --> General --> Tabs (Options) Tab navigation



Chrome:

Hold the [shift] key when clicking on a link to open it in a new window. There is currently no way to change the default behavior for opening links.